Allocation Problems in Low-Income Housing Policy

Rob Collinson

New York University

Market Design and Inequality Conference
August 2016

Outline

Motivation

- Federal gov't spends nearly $50 Billion on low-income housing programs annually
- Rationale for these programs are varied:
  - Homelessness: 560,000 on street or in shelter
  - Housing "affordability": 7.5 M low-income renters pay more than 50% of income in rent
  - Segregation/De-segregation
  - Neighborhood Effects/Place-Making
- Rationed assistance: 1-in-4 eligible receive assistance
- Little or no attention from Market Designers!

Allocation Problems

- Which eligibles gets assistance?
- What types of assistance do they get?
- How long do they wait for assistance?
- Which subsidized buildings are they assigned to?
- Which neighborhoods do subsidized households live in?
- Which buildings should be demolished/and or re-developed?

Chapter: Allocation Problems

1. Homeless assistance programs to at-risk individuals and families
2. Housing vouchers or public housing offers to eligible households
3. Housing voucher holders to better neigborhoods

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Homelessness in the U.S.

- 560,000 homeless in January of 2015
  - 170,000 (30%) street homeless
  - 390,000 (70%) in shelters
- 1.5M persons experience some homeless spell in shelter each year
- Street homelessness is overwhelmingly single adults (90%)
- About 45% of sheltered population is families with children
- Children make up about a quarter of the homeless
- Chronic homeless make up 17 percent of total homeless population

Costs of Homelessness

Private Costs:

- Mortality rates 1.6-3 times higher than other adults their age (Barrow et al. 1999, Morrison 2009)
- Homeless duration linked to duration of psychological distress (Scutella and Johnson 2016)
- Adverse effects on children in homeless families:
  - Childhood homelessness lowers educational attainment and reduces odds of employment (Cobb-Clark and Zhu 2015)
  - 2× likely to repeat grade and have learning disability (National Center on Family Homelessness, 1999)

Costs of Homelessness

Social Costs:

- Shelter costs can be very high:
  - Mean: $57,600 per family/year, range: $22,656-$110,040 (Gubits et al., 2015)
  - Mean: $16,500 per bed/year (Wong, Park and Nemon, 2005)
  - Mean: $2,400 per individual first-time homeless (Spellman et al. 2010)
- Est. public costs (health care, police and incarceration, and welfare) of the average homeless person in Los Angeles to be $5,148 per year (Flaming et al 2015)
- Disutility from seeing others homeless

Homeless Assistance Programs

- "Mainstream" housing programs (housing vouchers, public housing, LIHTC) reduce homelessness, but don't explicitly target homeless
  - Public Housing and Vouchers reduce homelessness substantially, but only 5% of control group actually became homeless (Collinson 2016)
  - Only 10% of PHAs have a strong "general preference" for homeless (Duntan et al. 2014)
- Programs which target homeless or imminently homeless:
  - Emergency Shelters
  - Transitional Housing
  - Rapid Re-Housing
  - Permanent Supportive Housing
  - VASH-Voucher

Program	Rapid Re-Housing	Transitional Housing	Permanent Supportive Housing	Permanent Subisdy (Voucher, Public Housing)
Length of Stay	Indefinite	6-24 months	Indefinite	Indefinite
Length of Subsidy	4-6 months	$<$ 24 months	Indefinite	Indefinite
Project-Based	No	Yes (typically)	Yes	No (Vouchers), Yes (PH)
Service Instensity	Low	Moderate	High	Low (none)
Availability	Depends on Funding	Bed Availability	Bed Availability	
Eligibility	meet homeless definition + possibly self-sufficient	meet homeless definition	meet homeless definition + disability OR mental health issue OR substance prob	Low-Income
Provider Prefernces	Weak	Strong	Strong	Moderate

Current System

Design:

- Referral-based system
- Forms of intake:
  - Centralized: Call Center or Single Intake Center
  - Decentralized: Intake at individual providers

Institutions

- Network of providers: non-profit homeless services, faith-based organizations, social services agencies and public housing authorities
- An organizing entity known as a Continuum of Care (CoC)
  - Organizes the system of providers, Applies for federal funding, Strategic planning
  - Oversees Homeless Management Information Systems (HMIS)

Example Referral System

1. Family appears at intake or contacts call center
2. Initial prevention and diversion screen
3. Housing and prioritization assessment: determines which intervention and how high priority they are to be placed
4. Staff use assessment to determine the households place on the waiting list for that intervention
5. When household is top of the priority list the household is referred to the program if a space is available
6. If a households "best" referral is to a program with a long wait list, they might be referred to their "next best option" (the second-highest intervention match on their results)

Control Group (18 month follow-up)	
Voucher	9.6
Rapid Re-Housing	17.6
Transitional Housing	24.9
Permanent Supportive Housing	6.4
Public Housing	6.6
Project-Based S-8	4.8
No Program Use	28.3

Problem: how to match at-risk and homeless individuals to available assistance programs?
Flaws with current system:

- Search frictions : homeless families and/or case manager must "shop around" to find available assistance which can be inefficient and costly
- Current systems often leave households unmatched (28.3% of shelter families in Family Options Study, Gubits et al. 2015)
- Assessment and referral often don't respect individual preference ordering (defined by assessment tool)
- Individuals lack information about funding availability and waiting times (Evans, Sullivan and Wallskog 2016, Fisher et al. 2014)
- No systematic mechanism for resolving provider preferences and individual preferences

Preference Heterogeneity

Preferences over: locations, unit-type, project v tenant-based, support services, wait time etc.

Fisher et al. 2014:

- RRH (+) The shelter was inconvenient because my kid's school was on this side of town. [Current location with RRH] is more local to everything we're used to as far as our support system
- About TH (-) I left the shelter because there was some drama there, and I didn't want want my daughter to be in that situation... And I'm really considering just like getting out of this program period... Cause it's not helping me.
- About RRH (+) Well for one because I was in my own unit, privacy, the assistance was awesome. I was then able to bring my child back. I felt stable for a minute
- About services in TH (+)And everything was helpful as far as getting into the right agencies, finding work, making you feel like you are still a part of something, you know?

Different Take-up ($P(D = 1|Z = 1) - P(D = 1|Z = 0)$):

- Voucher: 72 pp , Rapid Re-Housing 40 pp, Transitional Housing 25 pp

Design Considerations

Preferences:

- heterogeneity in assistance preferences and waiting time tolerance
- Provider and Clients (two sided matching?)

Treatment Effects:

- heterogeneity in effects

Private Information:

- Individuals/HH have private information about true housing need
- Attempting to verify details of housing conditions can be costly

Moral Hazard v Adverse Selection (O'Flaherty 2009)

- Deep targeting ensures that resources are spent in cost effective manner
- Targeting could in principle encourage people to manipulate status

Existing Approaches and Possible Solutions(?)

Adverse selection/ private information

- Technological solution:
  - Machine Learning (Collinson and Reed 2016)
  - Smart phone tracking of at-risk persons (Corinth 2016)

Moral Hazard

- Ordeal Mechanisms (case management, support services required)
- Contract theory (vary assistance probabilities)

Future Directions

Task:

- Design market where dominant strategy is truth-telling, deal with dynamic matching environment, produces fast, efficient and stable matches, addresses moral hazard, and serves neediest hhs

Evaluate Empirically!

- Metrics: days spent in shelter, days stably housed, % referrals accepted
- Data: leverage Homeless management Information Systems (HMIS)
- Family Options Study could provide important data on preferences

Allocation of Vouchers to Neighborhoods

- Receipt of housing voucher does not spur low-income families to move to better neighborhoods (Jacob and Ludwig 2012, Gubits et al 2006)
- Moving children from high poverty to lower poverty neighborhoods produces better outcomes (Chetty, Katz and Hendren 2016)
- Adults also seem to benefit in terms of physical health, mental health and happiness when they move to lower poverty (Ludwig et al. 2013)

About the Housing Voucher Program

- Serves 2.3 Million low-income households each year
- One-in-three households issued a voucher cannot successfully lease-up and lose their voucher (Finkel et al 2001)
- Households pays 30 percent of income towards rent and HUD pays the difference between the market rent on the unit and the tenant contribution up to a rent ceiling
- Rent ceiling is set by local housing authority as 90-110% of federally determined Fair Market Rent
- Rent Ceiling set based on 40th percentile of Metro Area rent distribution by bedroom size

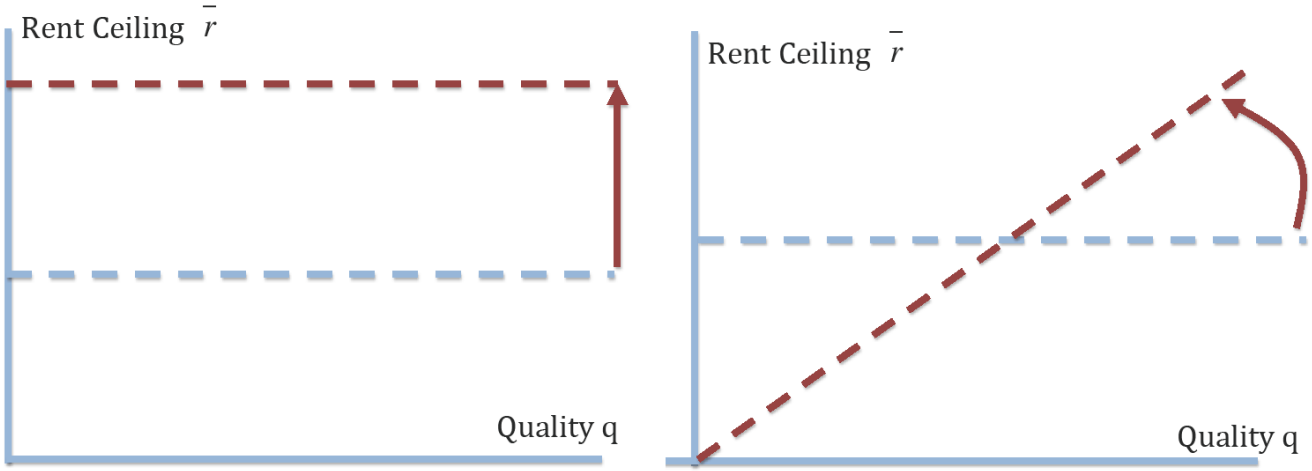
Why Don't Voucher Holders Move to Better Neighborhoods?

- Parents who choose high poverty neighborhoods are esp. sensitive to rental prices (Gregory et al. 2016)
- Present Bias (Chetty 2015)
- Informational Asymmetries
- Vouchers must weigh prob finding acceptable unit against quality (Collinson and Ganong 2016)
- Landlord discrimination against voucher holders

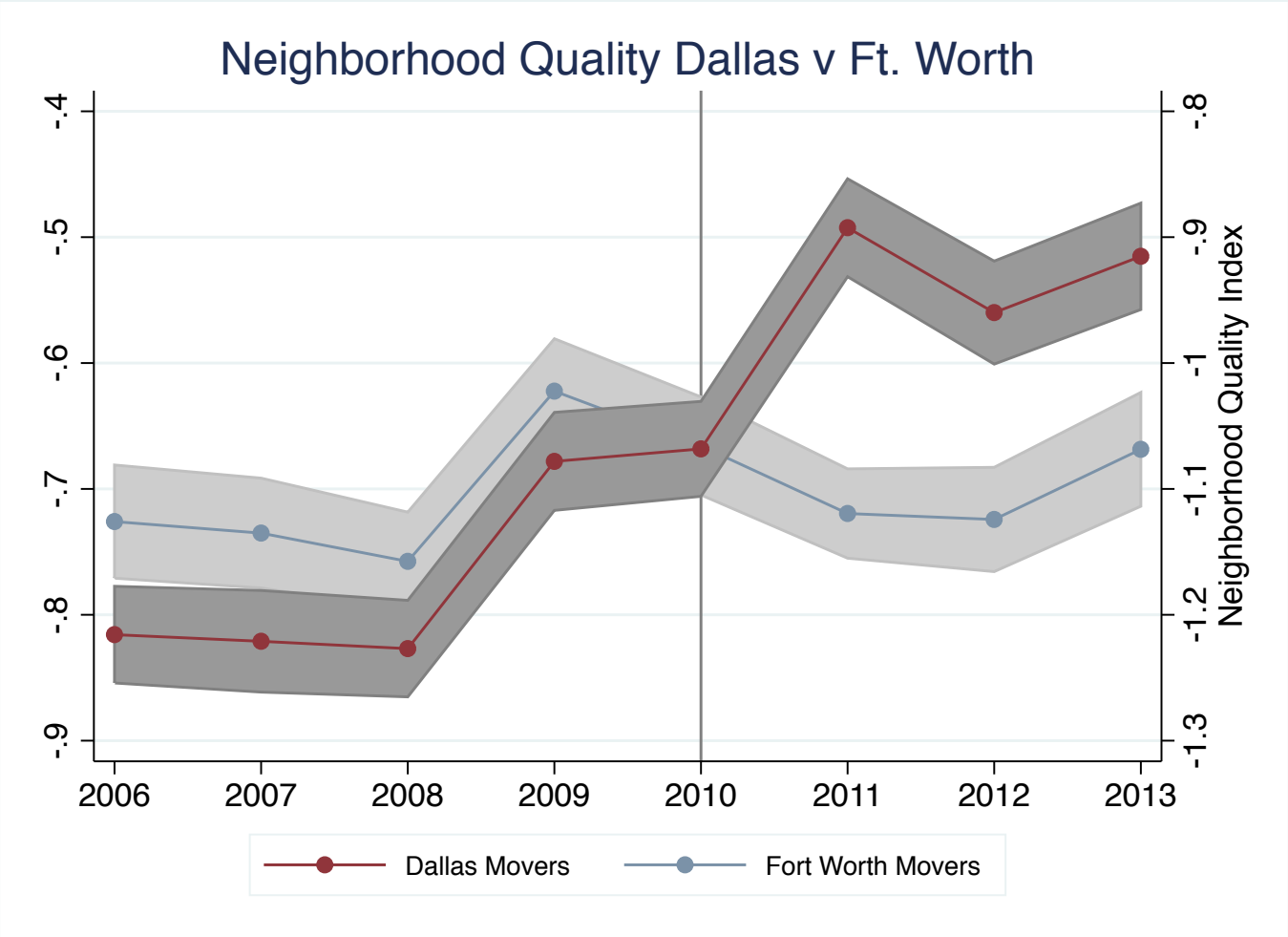
Collinson and Ganong 2016

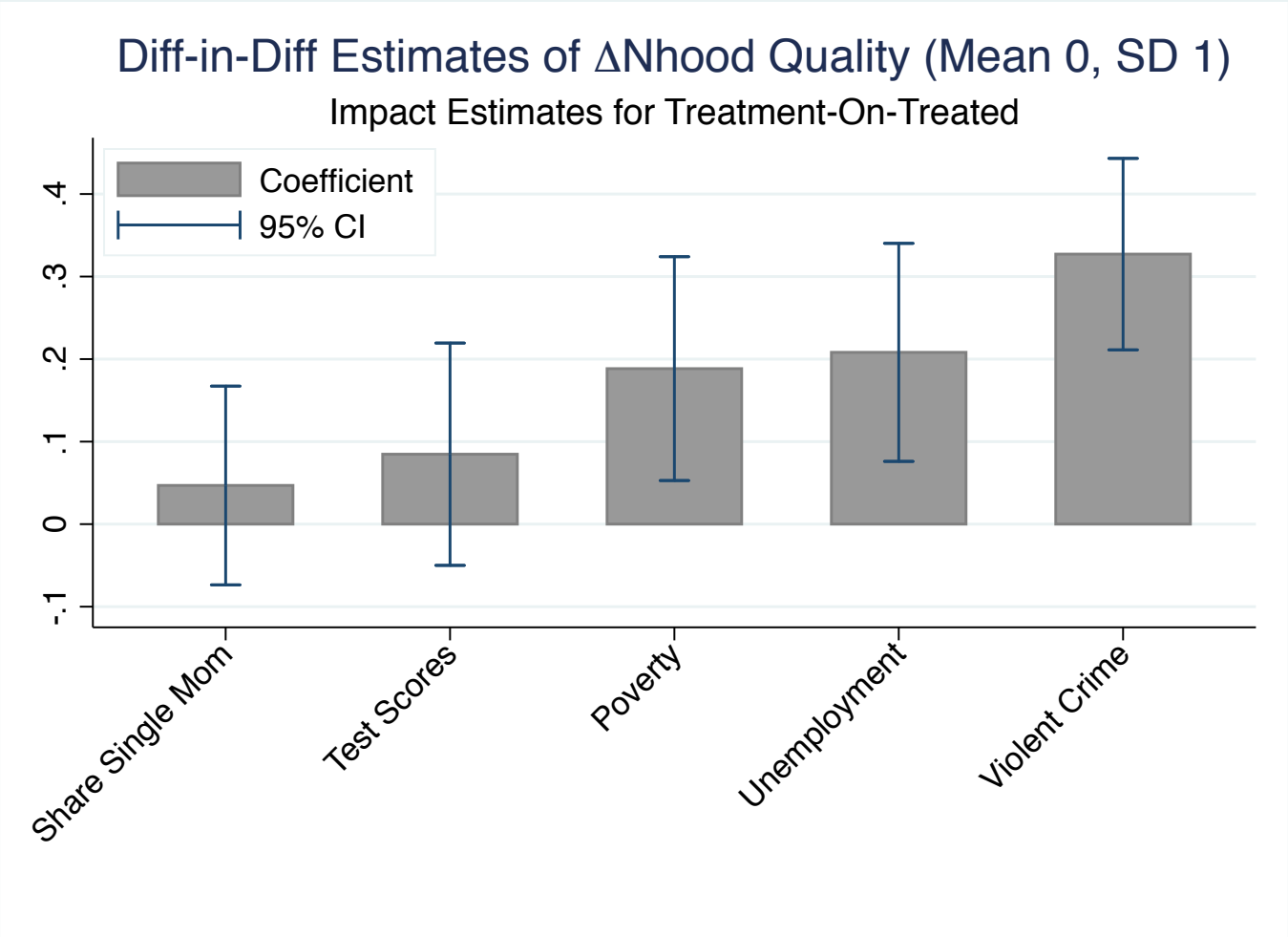
- What is the effect of raising the voucher rent ceiling:
  - Do voucher holders move to better neighborhoods?
  - Do landlords raise rents?
- Use three quasi-experimental research design to study the incidence of changes to voucher payments
- Compare across-the-board increase with "tilting" ceiling to quality (Zip-level rent ceiling):
  - Across-the-board: families "spend" increase on improving matching odds
  - Zip Ceiling: first-order impact on quality

Existing Approaches and Solutions



Existing Approaches and Solutions




Diff-in-Diff Estimates of ΔNhood Quality (Mean 0, SD 1)
Impact Estimates for Treatment-On-Treated
Coefficient
95% CI
-.1
0
.1
.2
.3
.4
Share Single Mom
Test Scores
Poverty
Unemployment
Violent Crime

Moving Vouchers Holders to Better Neighborhoods

- Zip-level rent ceilings raised neighborhood quality in Dallas by 0.23 SD
- HUD has proposed replacing across-the-board increase policy with Zip-level ceiling in 30+ metros
- Areas for future design work:
  - How should housing authorities design landlord lists given to voucher tenants?
  - What mechanism should determine who receives mobility counseling?
  - Could information provision (app for voucher families) improve match quality?

Concluding Remarks

- Housing programs are complex and fragmented, but present many interesting design challenges
- Applications to important policy problems such as homelessness and segregation
- Decentralized programs offer opportunities for experimentation
- Housing agencies increasingly required to collecting quality administrative data to track programs